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THE PHYSICAL PROCESSES OF WRITING IN THE EARLY ORIENT AND THEIR RELATION TO THE ORIGIN OF THE ALPHABET[1]

By James Henry Breasted
University of Chicago

The investigation of the origin of our alphabet, always a subject of great interest, has been stimulated in recent years by the discovery of writing in Crete, and by the claim of Sir Arthur Evans that this Aegean writing was the source of the so-called Phoenician alphabet. In the midst of the present writer's work on the subject, in all too brief intervals snatched from other pressing duties, the trend of his own results has meantime received unexpected confirmation from the remarkable essay[2] of Dr. Alan H. Gardiner revealing the existence of a hitherto unkown script of Egyptian origin in Sinai, which may have been a form of the Proto-Semitic script, posited by Praetorius as the probable ancestor of both the Phoenician and South Semitic alphabets. At the same time the thoughtful remarks of Schaefer,[3] in a discussion of the reasons for the vowelless character of the Phoenician alphabet, have likewise lent further support to the author's conviction that the old and now widely rejected hypothesis of an Egyptian origin of the alphabet commonly called Phoenician must be carefully re-examined.

One of the neglected aspects of the entire problem has been its connection with the related question of the physical process and material equipment of writing in the Near East. This subject has bearing, and important bearing, on the whole question of the influence of any given system of writing in the eastern Mediterranean. The present article, written under unusual pressure of other duties, makes no pretense to completeness, but may perhaps serve to clear up some of the current misunderstandings, and to establish the more fundamental points, in what may be called the archaeology of early oriental writing methods and their equipment.

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[1] This discussion was presented at the New York meeting of the American Oriental Society in April, 1915.

[2] Alan H. Gardiner, "The Egyptian Origin of the Semitic Alphabet," *Journal of Egyptian Archaeology*, III, Part I (January, 1916). It is accompanied by some additional observations by A. E. Cowley, "The Origin of the Semitic Alphabet."

[3] H. Schaefer, "Die Vokallosigkeit des phoenicischen Alphabets," *Zeitschrift für aegyptische Sprache*, LII (1915), 95–98. I have not seen the article reviewing recent theories by A. Reinach, *Revue Epigraph.*, N.S., II (1914), 130–55.

An examination of the civilizations of the Near East shows clearly that (excluding monumental documents) there were two physical processes of writing in the eastern Mediterranean world. One, which grew up on the Nile, consisted in applying a colored fluid to a vegetable membrane; the other, which arose in the Tigris-Euphrates world, incised or impressed its signs on a yielding or plastic surface which later hardened. Both of these methods reached the classical world: in the wax tablet for the Greek or Roman gentleman's memoranda, and in the pen, ink, and paper (papyrus) which have descended to our own day. The early geographical line to be drawn between these two methods of writing may be indicated in the shortest terms by saying that the practice of incision on a plastic surface was Asiatic; the process employing pen, ink, and vegetable paper was Egyptian. It is important at this point to discern what we can of the interpenetration geographically and culturally speaking of these two methods of writing. This can best be done by a study of the relief monuments of the countries concerned. From these we can determine many questions regarding the physical process and the material equipment employed by the scribes of the early oriental world, beginning with Egypt. In order to bring together the Egyptian and Asiatic documents it will be necessary to state many facts of common knowledge among Egyptologists. On the other hand, the Asiatic reliefs seem to have been left entirely unstudied.

We shall omit all discussion of the origin and manufacture of papyrus paper,[1] and turn at once to its use. It was already in common use on the Nile in the fourth millennium B.C. In the mastaba reliefs of the Old Kingdom (2980–2475 B.C.) we have scores of relief pictures of the scribe at his task. For the most part he stands (Fig. 1) with a sheet of papyrus supported only on his left hand, holding the reed pen with the right hand. It is interesting to notice that this method of holding paper for writing, without any broad surface to support it, is still common in the East and may be seen almost anywhere on the streets in the native quarters of Cairo and Damascus. A seated scribe taking protracted dictation might spread his roll upon his knees, as the famous scribal statues of the Old Kingdom do (Fig. 2). The mere weight of a large roll might necessitate such support. Likewise a scribe whose work demanded the use of many records for reference, like the census-sheets and tax-rolls of the government, might squat before a small desk on which his records were piled up, tied up in neat bundles like a group of college diplomas (Fig. 3).

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[1] See the brief but fundamental statement on this subject in G. Moeller, *Hieratische Palaeographie*, I, 4–7.

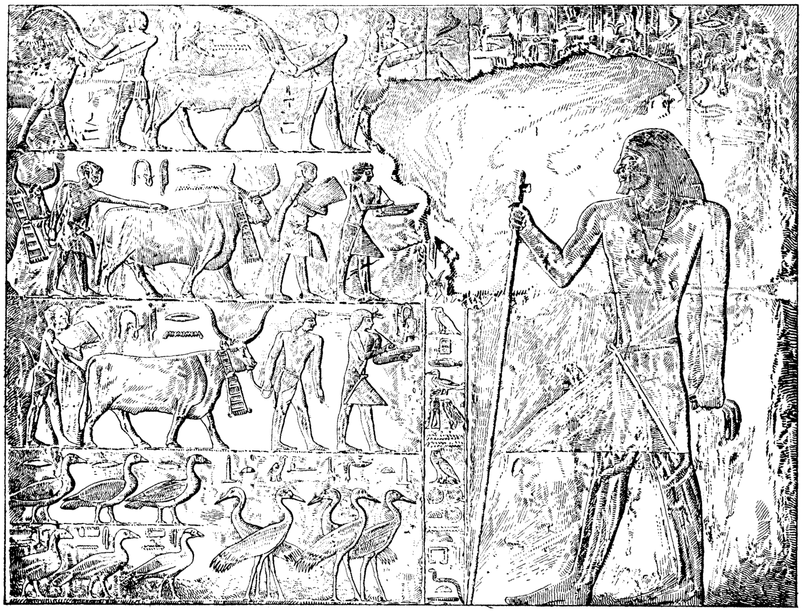
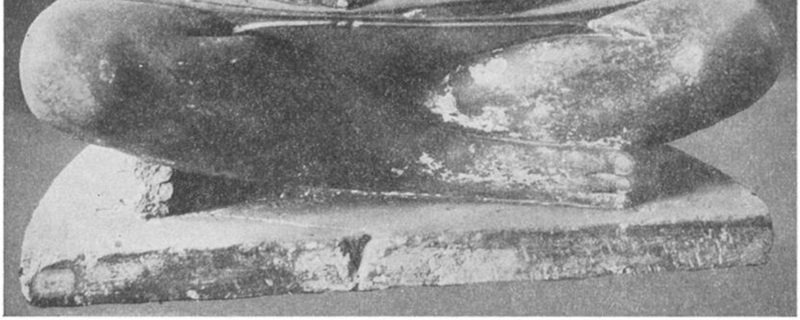


FIG. 1.—EGYPTIAN SCRIBES WRITING IN THE PRESENCE OF THEIR SUPERIOR

Three scribes stand before the noble, their chief, and keep count of the cattle which are being led up for inspection and numbering. Each of the writers supports a sheet of papyrus paper on the left hand as he holds the pen and writes with the right. Notice two pens, one for black ink and one for red, behind the ear of one scribe. Scene from a mastaba relief of the twenty-seventh or twenty-eighth century B.C., now in the Berlin Museum, with head of the noble restored from another relief now in the tomb of Ti at Sakkara, Egypt. The drawing was made for the author's Ancient History (now in press), used here by kind permission of Ginn & Co.



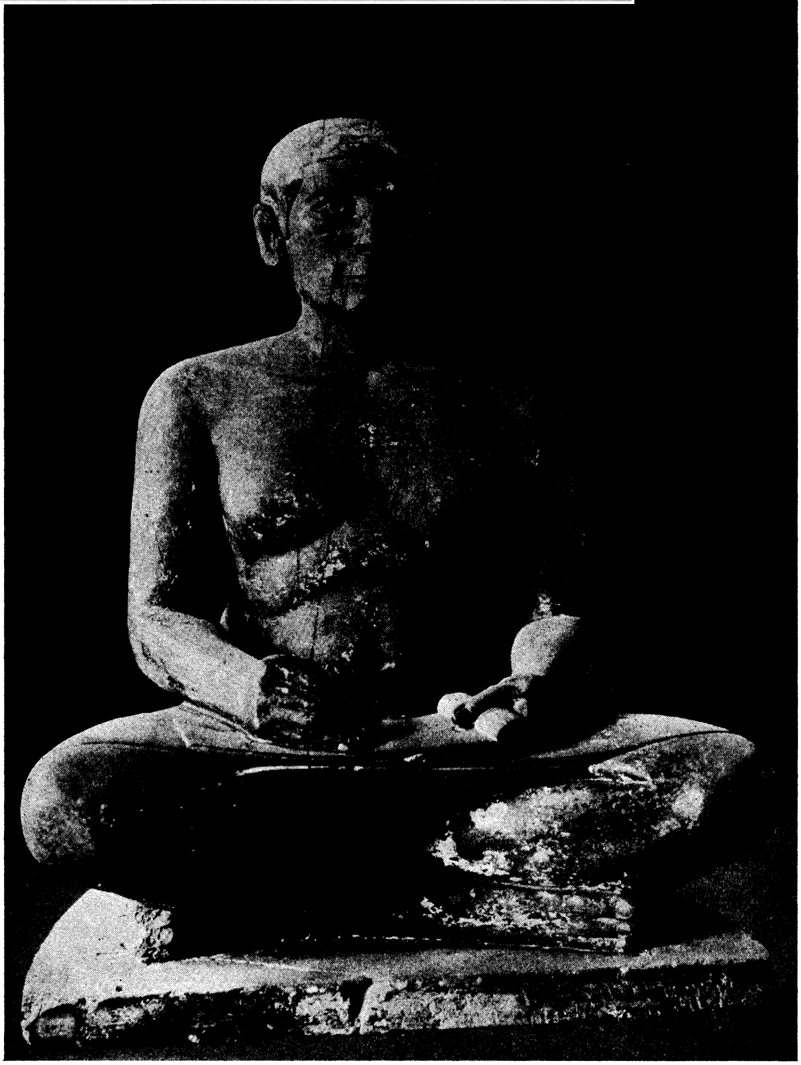


FIG. 2.—FAMOUS LOUVRE STATUE OF A SITTING SCRIBE

In protracted dictation or when it was necessary to hold a heavy roll, the Egyptian scribe might sit and spread his papyrus on his knees. This was not the normal or most common position. Compare Figs. 1, 3, and 4.

Sitting thus the scribe might write with his sheet supported on the desk, though his clerks squatting all around him (Fig. 3) do not even make use of the knee to support the paper, but hold it with only the outstretched left hand beneath it. Similarly the goddess of writing in a temple relief of the same age, though she is seated, extends the paper before her in the left hand (Fig. 4). It is evident that this was the normal position of the Egyptian scribe, whenever he was not obliged to hold a heavy roll. In ordinary business where a single sheet of paper was involved it was regularly supported upon the left hand. This peculiar, because inconvenient, practice is important to note. We shall find it later in Asia.

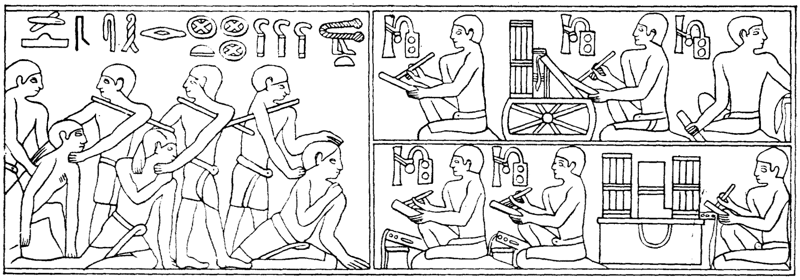


FIG. 3.—A GROUP OF EGYPTIAN TAX-COLLECTING SCRIBES IN THE OLD KINGDOM

The two superior officials with desks to some extent use the support of the desk for the papyrus. The others, though not standing, do not even lay the papyrus on the knee. This is the normal position. Relief scene from the tomb of Ti at Sakkara, Egypt, twenty-seventh century B.C. Drawing used here by permission of Ginn & Co.

The constant presence of the clerk and scribe at all sorts of places and times, even as early as the Old Kingdom, required a convenient arrangement of his writing outfit. We often see this secretarial outfit depicted in the mastaba reliefs, in two forms: an earlier form which became the hieroglyphic sign for "writing," "to write," and "scribe," and a later form which gained wide currency in the Near East. The scribe needed for his work: his reed pens, a protecting case for these, a jar of water, and a little wooden palette for mixing his ink. In the earliest sculptures depicting this outfit all of these articles are easily identified with the exception of the case for the pens. The wonderful carved panels of Hesire, an Egyptian noble of the thirtieth century B.C. (Figs. 5 and 6), display him several times with his writing outfit. Sometimes he carried it slung over

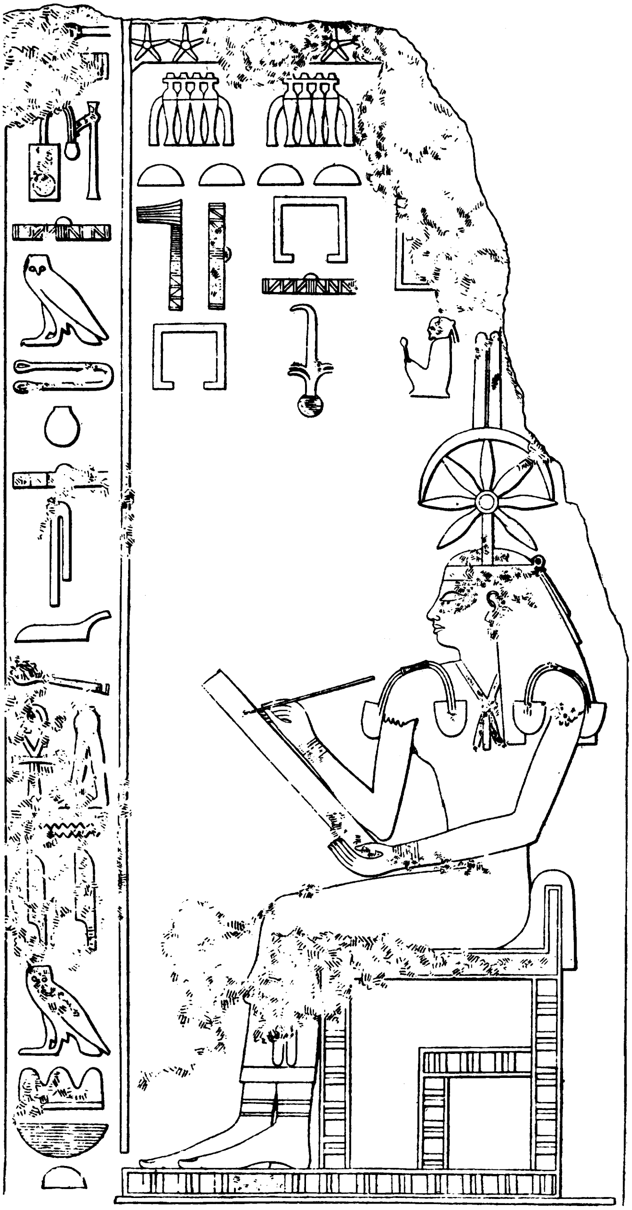


FIG. 4.—THE EGYPTIAN GODDESS OF WRITING, FROM AN OLD KINGDOM TEMPLE RELIEF

The goddess (called Sš't), although seated, holds the papyrus paper in the left hand and writes upon it without other support beneath it. The relief is from the pyramid temple of Sahure (twenty-eighth century B.C.) at Abusir, as published by Borchardt, *Grabdenkmal des Königs Sa'ḥure', Tafel 1*).

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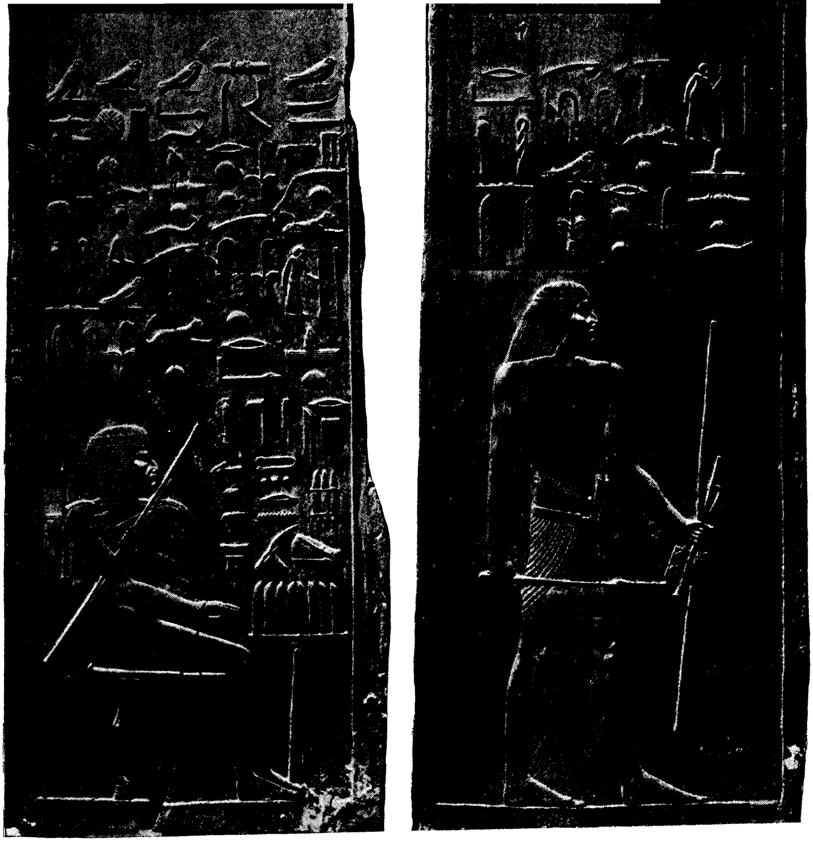


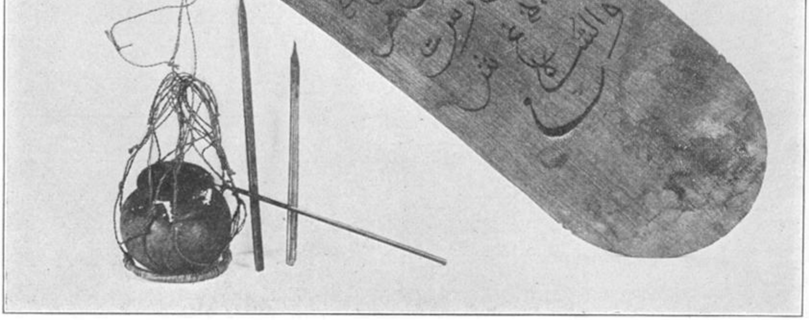
Figs. 5 and 6.—Hesire, an Egyptian Noble of the Thirtieth Century b.c., with Writing Outfit

In Fig. 5 the noble sits with his writing outfit hanging over his right shoulder, the palette with the two receptacles for black and red ink in front and the water jar behind. The way in which these parts are strung together is shown in the hieroglyph for "scribe" in the inscription over the noble's head. Wooden panel of the Third Dynasty in the Cairo Museum. In Fig. 6 Hesire carries his writing outfit in the left hand.

of the shoulder and the small rectangular palette with two circular recesses for mixing ink are easily recognized. The cylindrical stick beside the jar at the back of the shoulder is probably hollow for containing the pens, and closed with a cap at the top, of which there seems to be traces in the photograph. I have never examined the original on this point. At other times the noble carried his writing outfit in his left hand, along with his staff (Fig. 6). All the parts shown hanging over the shoulder are here clearly recognizable in the noble's hand. This older form of the pen-and-ink scribe's outfit, as we have intimated, was the one which became the hieroglyphic sign for "scribe," "writing," and the like. The sign will be recognized over each of the scribes in Fig. 3, where it designates the title "scribe." All the parts shown in Figs. 5 and 6, the water jar, the palette with two circular recesses, and the cylindrical pen case (?), will be easily recognized.

In the use of this outfit the scribe made his own ink, mixing soot or lampblack with an aqueous solution of vegetable gum, which kept the insoluble black in suspension. This was done in one of the circular recesses shown on the little palette, and the pen was replenished from there. In the other recess the scribe produced red ink in the same way, only using a red iron oxide instead of black. It was for this reason that we so often see the scribe with two pens behind his ear, one for the red and the other for the black ink. The red was used for the introductory words of a paragraph and it was from this custom, as is well known, that the manuscripts of Europe received the so-called "rubric," which has passed over into modern typographical usage. In Africa the influence of this ancient writing outfit of five thousand years ago is still observable in a native West African (Senegalese) writing equipment now in the Commercial Museum of Philadelphia (Fig. 7).

This outfit, however, was early improved by the Egyptian scribes by combining the palette and the pen case into one piece. The cylindrical pen case disappeared, and the small palette block, with the two circular recesses, was lengthened to furnish room for the pens. While no example of the older form of writing outfit has survived, this later form has often been found in tombs of the Empire and later. One example, indeed, dating from the Old Kingdom, was found by Petrie. An example in Haskell Oriental Museum shows the remains of the black and red ink just as they were mixed by the scribe for the last time. The specimen in Fig. 8, from the Berlin



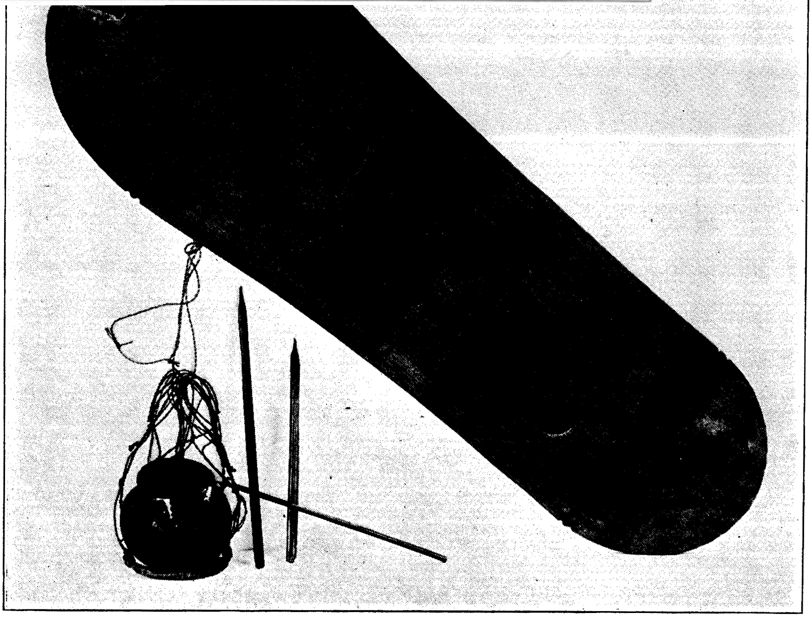


Fig. 7.—Writing Outfit of a West African (Senegalese) Native

The wooden palette and jar are strung together just like the early Egyptian outfit (Figs. 5 and 6). Note also the reed pens. Now in the Philadelphia Commercial Museum, to the kindness of whose secretary, Dr. Wilfred H. Schoff, the author is indebted for this photograph (see *Annual Rep. Philadelphia Commercial Museum*, 1914).

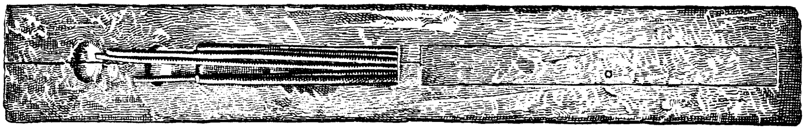


Fig. 8.—The Later Writing Outfit of the Egyptian Scribe

At the left end we observe the two receptacles where the black ink and red ink were prepared, making the outfit a kind of ink palette. The rest of it is a case for the carrying and protection of the fragile reed pens, which we see projecting from the opening. The whole is of wood and is now in the Berlin Museum. Drawing made from a photograph and available here by the kindness of Ginn & Co.

collection, is a good example of the typical equipment, with the reed pens sticking out of the case ready for the scribe's use. We often see this outfit, commonly called by Egyptologists a scribe's palette (*Schreibzeug* or *Schreibgerät*), depicted in the mastaba reliefs (see Fig. 9), where a scribe stands at the left with a pen case under his arm. This later writing outfit seems to have dispensed with the jar of water, which was no longer carried about with the scribe. In Fig. 3 we see the new palette and pen case propped up for easy access to the ink, upon a small jar, which we notice before each of the two scribes in the lower row at the left of the desk.

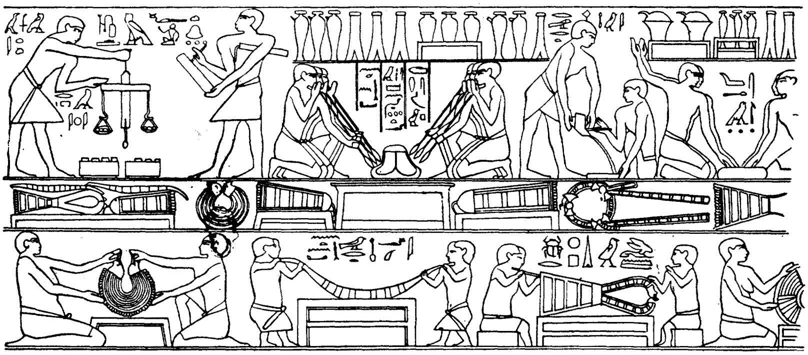
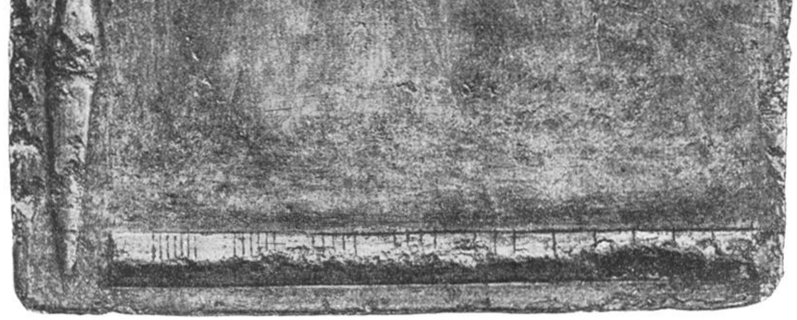


FIG. 9.—A GOLDSMITH'S SCRIBE KEEPING THE ACCOUNTS AND HOLDING UNDER HIS LEFT ARM A WRITING OUTFIT LIKE THAT IN FIG. 8

The goldsmith weighs out precious stones in the upper left-hand corner, and the scribe standing before him makes note of the amounts. A mastaba relief scene of the Old Kingdom from a drawing kindly loaned by Ginn & Co.

An examination of these surviving pens and of the writing which they did shows that they were almost as much brush as pen. Perhaps by chewing the end of his pen the scribe softened the fibers of the reed until they loosened and separated, forming a soft tuft like the end of a modern painter's camel's-hair pencil, when it has been greatly shortened by wear. With this soft tip the scribe almost painted his signs on the papyrus. It was only when incoming parchment offered a very hard writing surface that our sharp-pointed split pen came into use. The brush pen just described produced very different writing from the fine strokes of the later sharp-pointed pen. We shall later find the work of the brush pen in Asia.



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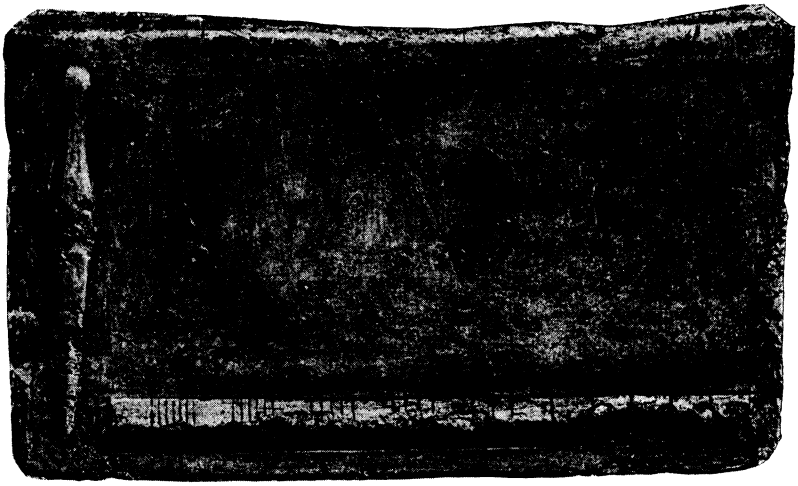

Fig. 10.—Babylonian Styluses Sculptured on Statues of Gudea

Spread out on the knees of the statue is the ground plan of a building (omitted on one statue) accompanied by a cubit graduated rule and an instrument at one end, thought to be a stylus, for writing cuneiform. From statues of diorite of the twenty-fifth century B.C., found at Lagash; here photographed from De Sarzec, *Découvertes en Chaldée*, Pl. 15.

We are now prepared to examine the materials and methods of writing discernible in Western Asia, chiefly on the basis of the relief sculptures, which unfortunately are not as plentiful as in Egypt. It is particularly in the early Babylonian period that we feel the lack of such guidance. The well-known Gudea statue with the building plan on the knees displays lying at one end of the plan an elongated instrument which has been thought to be a stylus, with which the Sumerian scribe wrote his clay tablet documents (Fig. 10). This does not seem to be certain. A careful study of the Asiatic system of incising the signs on a soft clay surface was made by Professor A. T. Clay, who secured accurate measurements of the largest angle of the wedges. These measurements showed that the stylus tip applied to the clay was regularly square.[1] Another study of the question was made by the lamented Messerschmidt,[2] who showed, by an examination of the clay tablets themselves, that the individual wedges of cuneiform writing were produced by a stylus cut from a river reed and given a square tip, which, when applied at an oblique angle to the surface of the clay, produced the wedge as an impression of one corner of the square tip.[3]

It is not until the age of the Assyrian Empire that the reliefs of Western Asia reveal to us the scribe in the act of writing on a clay tablet. The earliest such scene known to me is a relief of the reign of Tiglath-pileser IV (Fig. 11), depicting a scribe in the act of recording the plunder of a captured city. At the left is an official reading from a tablet, while before him stands a scribe with a thick clay tablet supported on the left hand. He has paused a moment in his writing, and raises his right hand with the stylus poised between the thumb and the palm of the hand, the fingers being stretched straight out. In such a pause the scribe might lift the stylus, grasped between the thumb and the third and fourth fingers, as also in Fig. 12. But in this posture he is more nearly ready to write. Notice that the tablet is held at an angle of about forty-five degrees, and the stylus, which is practically vertical, will therefore be applied at a sharply oblique angle, bringing one corner of the square tip to bear on the surface of the clay, just as Clay and Messerschmidt concluded from their examination of the actual tablets themselves. I am not aware that they ever examined the reliefs in their study of the archaeology of cuneiform writing.

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[1] See Clay, *Documents from the Temple Archives of Nippur*, Philadelphia, 1906, pp. 17–20.

[2] L. Messerschmidt, in the *Orientalistische Literatur-Zeitung*,

[3] Professor Clay has recently stated (*Geographical Magazine*, April, 1916) that the tip of the stylus was three-cornered, which I take it must therefore have been a second form of tip. The upper end of the stylus was sometimes round, with which circular impressions might be made if necessary.

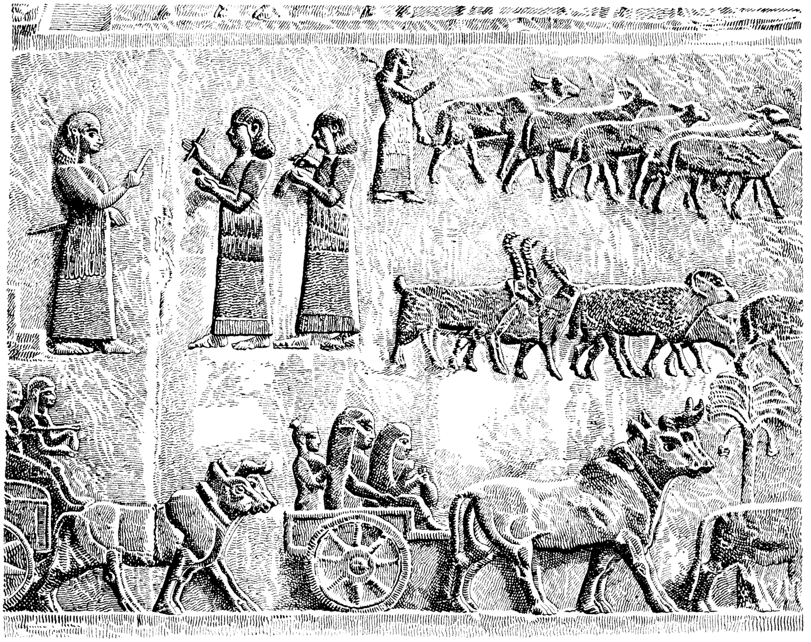
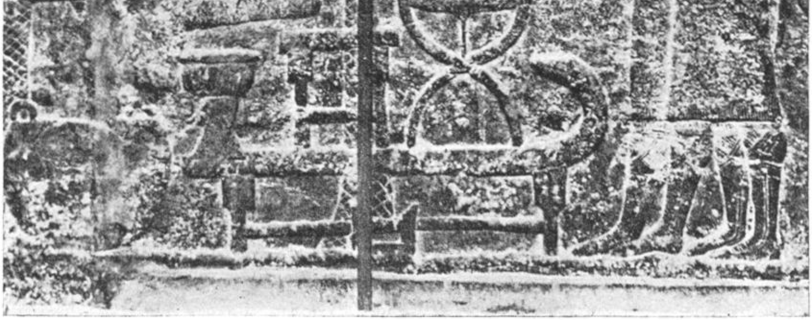


FIG. 11.—ASSYRIAN RELIEF OF THE EIGHTH CENTURY B.C., SHOWING TWO SCRIBES TAKING DICTATION

Before an officer reading from a tablet appears a scribe who has lifted his stylus from the tablet as he pauses in his writing. Behind is a second scribe writing with a pen on papyrus (see p. 245). Drawn from a relief of the reign of Tiglath-pileser IV (Patterson-Kleinmann, 88/89 =Layard, *Monuments of Nineveh*, I, 58). Drawing available by the kindness of Ginn & Co.

When the scribe actually applied the stylus to the clay, he bent all his fingers and held the stylus in the closed fist (see Fig. 13). This remarkable manner of holding the stylus, extraordinary as it may seem, is the normal one, as an examination of all the relief material shows. Indeed, this traditional position of the hand was likewise inherited by the Greeks from the Orient, and Greek scribes



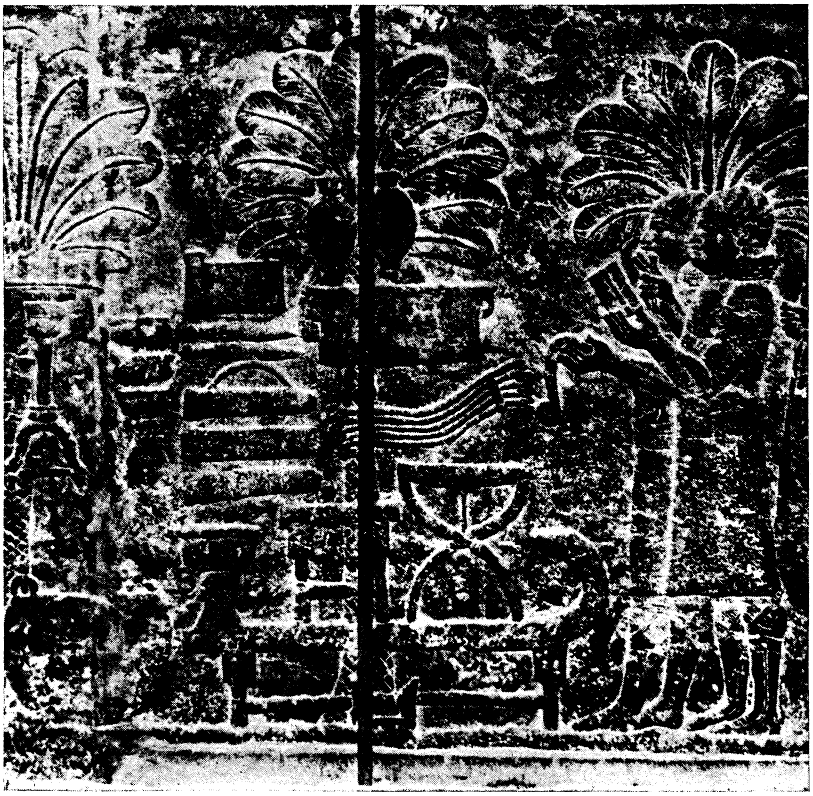
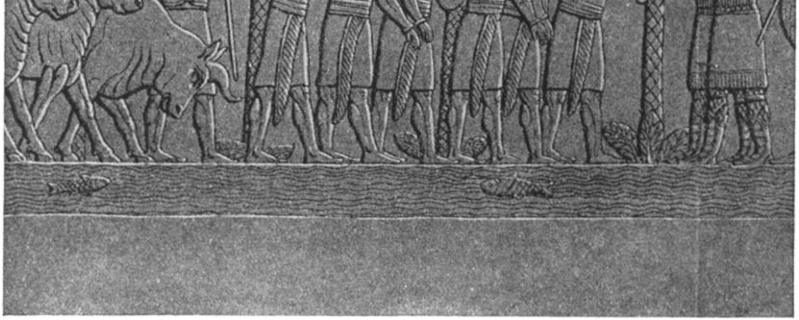


Fig. 12.—Assyrian Relief of the Seventh Century b.c., Showing Two Scribes Taking Dictation

A large pile of plundered furniture brought in by troops from the left is being inventoried by two scribes standing at the right. The nearer scribe holds a clay tablet of two columns in the left hand, with his stylus held between thumb and two fingers of the right hand. The further scribe holds a roll of papyrus on the left hand, but his pen is not shown. Relief from the palace of Sennacherib (Layard, II, 36 =Patterson, *Palace of Sinacherib*, 55/56).



this posture.[1]

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We now know the positions assumed by the scribes of the early Orient in practicing the two different methods of writing, first with

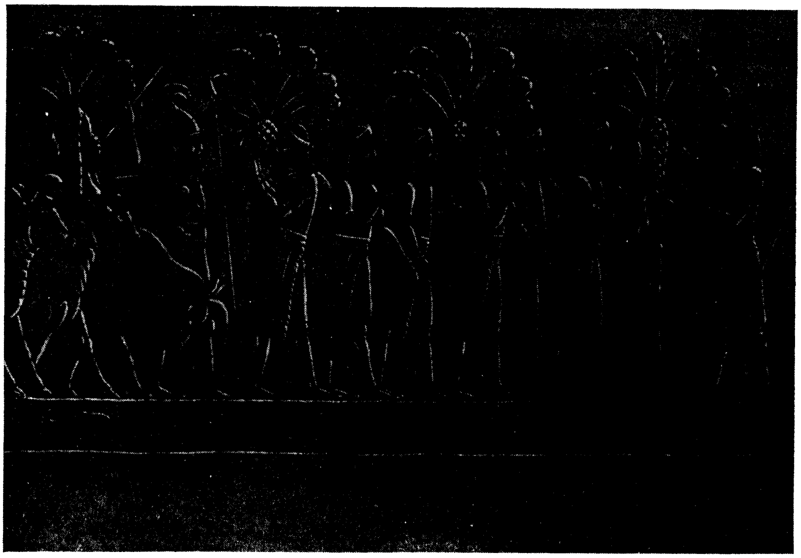

FIG. 13.—ASSYRIAN RELIEF OF THE SEVENTH CENTURY B.C., SHOWING TWO SCRIBES TAKING DICTATION

Assyrian officers coming in from the left bring up cattle and other plunder, which are being inventoried by two scribes standing at the right. The nearer, with clay tablet held in the left hand, writes with a stylus grasped in the closed right fist, with the stylus held vertically. The further scribe supports a sheet of papyrus on the left hand and writes with pen, exactly as does the Egyptian scribe in Figs. 1, 9, and others. Relief from the palace of Sennacherib (Layard, II, 26 =Patterson, *Palace*, 52, lower row).

pen and ink on papyrus; secondly, with the stylus on soft clay. When did the first method begin to displace the second, as we know it finally did in Asia? When did the pen invade the territory of the stylus? To be sure, in the days of widespread Babylonian commerce the stylus invaded the territory of the pen, and in intercourse with Asia the clay tablet was not uncommon in Egypt after 1400 B.C., in the so-called Amarna age. This interpenetration went on in both directions for a time, but after the fourteenth century B.C. the stylus was to yield to the pen. By the end of the twelfth century, papyrus paper was being imported into the Phoenician cities, as is shown by the report of Wenamon, when the king of Byblos was glad to receive a consignment of five hundred rolls of papyrus.[1] This event occurred at the very time when the alphabet which we call Phoenician was coming into use in Syria, whence it was carried far and wide by the Aramean merchants. Indeed, as is now well known, the Arameans were so common that Aramaic scribes were actually required in Assyrian administration. Aramaic scribes appear among the officials of Assurbanipal, and Aramaic secretaries are commonly mentioned in Assyrian contracts,[2] so that Aramaic dockets were finally placed on clay-tablet documents.

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[1] See Furtwaengler, *Mittheilungen des Archäologischen Instituts*, VI (1881), 174 f.; Studniczka, *ibid.*, XI (1886), 359 f., Tafel IX, 5. See Eckhard Unger, *Zum Bronzetor von Balawat*, Leipzig, 1912, p. 51; Unger seems unaware that the evidence for such a posture of the ancient Assyrian scribe in writing with the stylus is quite unequivocal.

[2] Essay cited in preceding note.

Under these circumstances we can understand why it is that with each of the cuneiform scribes whom we have seen writing on their clay tablets (Figs. 11, 12, 13), there appears another scribe using an entirely different equipment. This second scribe carries a roll or sheet of papyrus supported on his left hand. In some of the reliefs it shows its flexible character by the spiral roll which curls up at the overhanging end. On this material the scribe writes with a pen, for a comparison with the Egyptian sculptures above noticed makes it perfectly clear what physical method of writing is here employed in Western Asia. The pen has here invaded the territory of the stylus in the eighth century B.C. The occasional presence of a second scribe using pen, ink, and paper alongside the cuneiform scribe with his clay tablet is of far-reaching importance when we note the further fact that, in the sculptures of the Assyrian Empire, where the cuneiform scribe appears, *the penman is practically never absent.* In the Assyrian palace reliefs in scenes where the spoil of the captured cities or the severed heads of the slain are being brought up and counted, the scribal accountant is very commonly depicted making a record of the numbers. In the reliefs of Tiglath-pileser IV, Sargon, and Sennacherib, I find no less than seventeen such scenes, and I have no doubt that a careful examination would disclose others.[1] In every case where such accounting is going on the tablet scribe is accompanied by a second scribe using the Egyptian pen, ink, and paper. There can be no doubt that these penmen were Aramean clerks. It is evident, therefore, that to the Assyrian sculptor a scene of accounting demanded two scribes, one cuneiform and the other a penman; and the sculptor, from the time of Tiglathpileser IV on, had no other scene in his general notebook of sketches, which served as his constant source for such materials, just as did a similar sketchbook for the Egyptian relief sculptor.

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[1] Breasted, *Ancient Records of Egypt*, IV, par. 582.

[2] See Maximilian Streck, *Klio*, VI (1906), 185–225, especially p. 221.

If anyone has a lingering doubt about the Egyptian character of the writing equipment of these Aramean scribes in the Assyrian reliefs, such doubt will I am sure disappear on examination of a relief of the Aramean king of Samal, discovered at Senjirli by von Luschan, to whose kindness I owe the accompanying photograph (Fig. 14). The king is seated on his throne at the left, while before him stands his secretary, with an object under his left arm, which looks surprisingly like a book, but as this is impossible it may perhaps be a roll partly unrolled. In his left hand, however, he carries an unmistakable Egyptian writing outfit, like that in Fig. 8. Further confirmation of the identity of this writing outfit is contained in the Asiatic Semite's name for it. The prophet Ezekiel three times (9:2, 3, and 11) mentions a man having at his girdle a קֶסֶת הַסֹּפֵר. Now the Egyptians called the writing outfit shown above in Fig. 8

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[1] The cases known to me are the following: Sargon: (1) Botta, II, pl. 146; (2) Botta and Flandin (scene now lost in the Tigris), *Monuments de Ninive*, Pl. 141; Tiglathpileser IV: (3) Layard, *Monuments of Nineveh*, I, 58 =Patterson-Kleinmann, Photographs 88–89; Sennacherib: (4) Layard, II, 19 =Patterson, Palace of Sinacherib, 60/61; (5) Layard, II, 29; (6) Layard, II, 26 =Patterson, Palace, 52, upper row; (7) *ibid.*, lower row; (8) Layard, II, Pl. 35 =Patterson, Palace, 53/54; (9) Layard, II, 36 =Patterson, Palace, 55/56; (10) Layard, II, 37 =Patterson, Palace, 17/18; (11) Layard, II, 30; (12) Layard, II, 49; (13) Layard, II, 50 =Patterson, Palace, 38; (14) Patterson, Palace, 40/41; (15) Patterson, Palace, 71/73 (this is a part of the famous scene of Sennacherib at Lachish); (16) Patterson, Palace, 94/95; (17) Patterson, Palace, 98, No. 28, upper right-hand corner. I have not been able to use the Patterson photographs and the Layard plates together, and my notes on the two were made at different times. It may be, therefore, that one or two of the Patterson scenes counted in the seventeen are identical with those in Layard; but I think not. The only representation known to me, in which the cuneiform scribe was not accompanied by the Aramean penman, is the small scene on the Balawat gates, where a cliff stela is being engraved, and a scribe stands by, taking dictation (see Unger, *Zum Bronzetor von Balawat*, p. 51, and Tafel, III, 7). Many of the scenes in Layard are so badly drawn that the scribes are not easily recognizable. It is a significant commentary on the lack of archaeological study in Assyriology that we are still without a modern accurate publication of Assyrian wall reliefs.

onants *g-s-t*,
at the Egyp-
.[1]

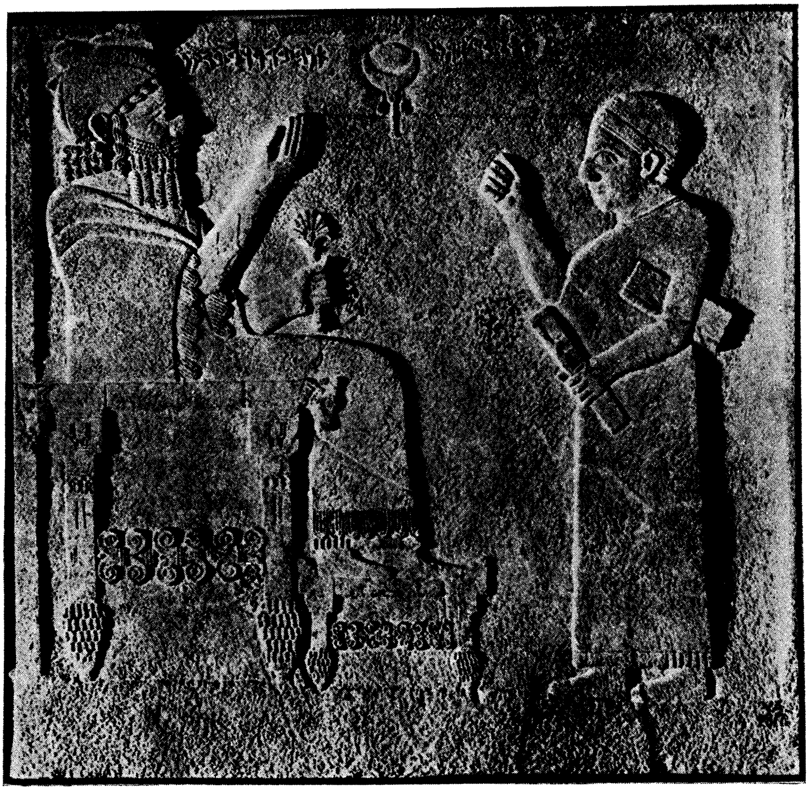

FIG. 14.—ARAMEAN SECRETARY OF THE KING OF SAMAL HOLDING AN EGYPTIAN WRITING OUTFIT

Before the king enthroned (at the left) stands his secretary (at the right) with an Egyptian writing outfit in his left hand, like that shown in Fig. 8. Relief of the eighth century B.C., discovered by von Luschau at Senjirli. Photograph kindly furnished by Professor von Luschau.

This Egyptian writing outfit, carried by the Aramean secretary of Samal, of course contained reed pens with a soft brush point like those we have found in Egypt. If this official were to begin taking down his lord's dictation, he would spread his papyrus paper on his left hand, as we have seen the Egyptian scribe doing, and after him the Aramean scribes on the Assyrian reliefs. The pen would make the same broad strokes produced by the Egyptian scribe, and to settle the matter once for all, it is important to notice at this point that the Aramaic ostraca found at Samaria, perhaps reaching back into the ninth century B.C., clearly show that the soft-pointed Egyptian brush pen was employed in writing them.[1] Finally we know exactly how these Aramean documents of Western Asia looked, since we have been able to hold in our hands the Elephantine papyri.

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[1] The identity of *gsty* and the Semitic קֶסֶת has been noticed by W. M. Müller in the *Orientalistische Literatur-Zeitung*, III, 49 ff., 328.

The system of writing which employed pen, ink, and paper was the only one which possessed an alphabet, and which wrote that alphabet without vowels. It is evident that the pen-ink-and-paper method of writing came from Egypt into Asia and spread there at the very time when the alphabet also was appearing and coming into common use in the same region. It follows therefore that the Egyptian system of writing was in most intimate contact with the whole scribal situation in Western Asia, and it is highly unlikely that we can entirely dissociate the physical process and material equipment contributed by Egypt to Asia at this time from the alphabet which Asia likewise gained at the same time. That the pen-ink-and-paper method of writing brought with it into Asia also the influence of the system of writing practiced by it, is shown by the fact that the Samaria ostraca employ the Egyptian hieratic numerals, as Sprengling has noticed on the originals.[2]

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[1] I owe knowledge of this fact to my colleague, Professor Martin Sprengling, who has worked with the originals, now in Constantinople.

[2] It will be seen that this discussion is an endeavor to present the main items of the evidence which may be drawn from the archaeology of ancient writing in the Near East, before undertaking a discussion of the alphabet itself, which the writer hopes later to do. I should perhaps mention that Professor Sayce has endeavored to show that Babylonia possessed and used papyrus paper in Sumerian days (Sayce, *Transactions of the Society of Biblical Archaeology*, I [1872], 343–45). His evidence consists of four main points: first, that the ideograph for a "written tablet" is compounded of two signs, one for "writing" and the other for "water," showing that the writing material came from the water and must therefore be papyrus(!). But clay might equally well come from the waterside, or in any case it was softened and kneaded with water for molding into tablets. If the sign really means "water," it might have referred to a number of things beside papyrus. The second point in Professor Sayce's argument is that an Assyrian translation of an old Sumerian ideograph for "writing" was "shaft of a reed," which he thinks was of course papyrus. But it is well known, and Messerschmidt's examination of the tablets themselves demonstrated the fact, that the scribe's stylus was a strip split from a reed. The Assyrian translation in question was nothing more than a reference to

the scribe's stylus. Thirdly, Professor Sayce adduces the word "*likhusi*" as meaning papyrus because it has a "wood" determinative before it. But this is surely a long way from identifying the word as meaning papyrus. Fourthly and finally, Professor Sayce quotes the following passage in Pliny (*Nat. Hist.* xiii. 22): "Nuper et in Euphrate nascens circa Babylonem papyrum intellectum est eundem usum habere chartae." This testimony from the first century A.D. simply furnishes a later stage in the history of paper in Western Asia, of which the evidence presented by the present writer furnishes the first stage. There is not a shred of good evidence for any general use of papyrus in Western Asia before 1100 B.C. From that date on, it must have gradually become more and more common, especially in Assyrian and Persian administration. Benzinger's statement (*Hebräische Archäologie*^{2}, p. 184) that Jeremiah's bill of sale (Jer. 32:10 f.), some five hundred years after the introduction of papyrus in Syria, was likely to have been a clay tablet, demonstrates complete unfamiliarity with the archaeological evidence presented above and is another illustration of the excessively "Pan-Babylonian" point of view from which his book is written. Only the fact that the king cut up and burned Jeremiah's written prophecy restrains Benzinger from making that document also a clay tablet! The LXX here (Jer. 43:1 f.) translates χάρτης and χαρτίον, that is "papyrus," showing what was obvious to the oriental reader. The usual date for the introduction of papyrus into Europe (that is, Greece), about the sixth century B.C. (e.g., Darenberg-Saglio-Pottier, *Dict.*, IV, 319, "vers le VI^{e} siècle"), is probably far too late. It must have come into Greece at a time when Byblos was the leading port of Phoenicia; otherwise papyrus would not have been named by the Greeks after this city, βυβλος (cf. Levy, *Semit. Fremdw. im Griech.*, p. 172; Muss-Arnolt, *Trans. Amer. Phil. Assn.*, XXIII, 125; Boisacq, *Dictionnaire Etymol.*, p. 119), and Byblos had long since sunk into insignificance beside Tyre and Sidon in the sixth century B.C. It is more probable that the Cretans of Phaestus and Cnossus in Mycenean days were already using papyrus. Cultivated as far west as Sicily and as far east as Babylonia, papyrus, after giving way to an interval of parchment, finally surrendered entirely with the incoming of rag paper from the Chinese. Specimens of Chinese paper as old as the second century A.D. have recently (1906–8) been found by M. Aurel Stein west of Tun-Huang. They have been examined by Wiesner, and shown to be real rag paper. Indeed, vegetable-fiber paper was made by Ts'ai Lun in 105 A.D. (Wiesner, "Über die ältesten bis jetzt, aufgefundenen Hadernpapiere," *Sitzungsber. der Kais. Akad. der Wiss. in Wien*, CLXVIII; 5. Abh., vorgelegt 10. Mai, 1911). From the Chinese the Arabs then learned to make rag paper, especially after the capture of Samarcand. Parchment was then of course doomed. The Arabs began making rag paper in 751 A.D. and it was being manufactured in the south of Europe as early as the tenth or eleventh century. The above historical and archaeological facts make it clear that papyrus paper, pen, and ink were introduced from Egypt into Western Asia, beginning after 1100 B.C. Their introduction was therefore contemporaneous with the appearance and early use of the so-called Phoenician alphabet.